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ABSTRACT

This uniquely comprehensive and current survey of the research in science education has been compiled by the most prominent experts in the field. More than a summary of findings, the content of this comprehensive single volume provides an assessment of the significance of research; evaluates new developments; and examines current conflicts, controversies, and issues. The volume is presented in five parts: teaching, learning, problem solving, curriculum, and context. It provides a historical look at the evolution of science education research while discussing the influence of current research on science teaching, and also considers controversial issues in science education, such as gender, ethnicity, and assessment, and the evolution of these issues from teaching, learning, and research perspectives. Chapters include: (1) "Research on Science Teacher Education" (Anderson, Ronald; and Mitchener, Carole); (2) "Research on Instructional Strategies for Teaching Science" (Tobin, Kenneth; Tippins, Deborah; and Gallard, Alejandro); (3) "Research on Using Laboratory Instruction in Science" (Lazarowitz, Reuven; and Tamir, Pinchas); (4) "Research on the Acquisition of Science Knowledge: Epistemological Foundations of Cognition" (Lawson, Anton); (5) "Research on Alternative Conceptions in Science" (Wandersee, James; Mintzes, Joel; and Novak, Joseph); (6) "Research on the Affective Dimension of Science Learning" (Simpson, Ronald; Koballa, Thomas, Jr.; Oliver, J. Steve; Crawley, Frank, III); (7) "Research on Problem Solving: Elementary School" (Barr, Bonnie); (8) "Research on Problem Solving: Middle School" (Helgeson, Stanley); (9) "Research on Problem Solving: Earth Science" (Ault, Charles, Jr.); (10) "Research on Problem Solving: Genetics" (Stewart, James; and Hafner, Robert); (11) "Research on Problem Solving: Chemistry" (Gabel, Dorothy; and Bunce, Diane); (12) "Research on Problem Solving: Physics" (Maloney, David); (13) "Research on Goals for the Science Curriculum" (Bybee, Rodger; DeBoer, George); (14) "Research on Assessment in Science" (Doran, Rodney; Lawrenz, Frances; and Helgeson, Stanley); (15) "Research on

the History and Philosophy of Science" (Duschl, Richard); (16) "Research on the Uses of Technology in Science Education" (Berger, Carl; Lu, Casey; Belzer, Sharolyn; and Voss, Burton); (17) "Research on Classroom and School Climate" (Fraser, Barry); (18) "Research on Gender Issues in the Classroom (Kahle, Jane; and Meece, Judith); and (19) "Research on Cultural Diversity in the Classroom" (Atwater, Mary). (JRH)

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